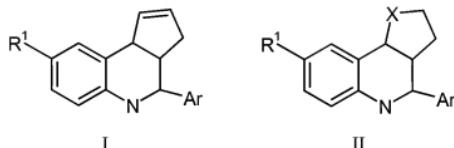


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (original) A method of treatment or prophylaxis of psychotic disorders, intellectual impairment disorders or diseases or conditions in which modulation of the  $\alpha 7$  nicotinic receptor is beneficial, which method comprises administering a therapeutically-effective amount of a compound of Formula I or formula II:



wherein:

R<sup>1</sup> is -OH, -N(R<sup>2</sup>)<sub>2</sub>, -NR<sup>2</sup>-SO<sub>2</sub>-R<sup>2</sup>, -SO<sub>2</sub>-N(R<sup>2</sup>)<sub>2</sub>, -CON(R<sup>2</sup>)<sub>2</sub>, or -NR<sup>2</sup>COR<sup>2</sup> where R<sup>2</sup> at each occurrence is independently selected from hydrogen, C<sub>1-4</sub>alkyl, halogenatedC<sub>1-4</sub>alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3 R<sup>3</sup> moieties;

X is O, S or CH<sub>2</sub>;

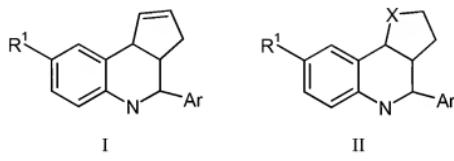
Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>;

or a diastereoisomer, enantiomer or pharmaceutically-acceptable salt thereof.

Claim 2 (original) A method of treatment or prophylaxis according to Claim 1, wherein said psychotic disorder, intellectual impairment disorder or disease or condition in which modulation of the  $\alpha 7$  nicotinic receptor is beneficial is selected from Alzheimer's disease, learning deficit, cognition deficit, attention deficit, memory loss, Lewy Body Dementia, Attention Deficit Hyperactivity Disorder, anxiety, schizophrenia, mania, manic depression,

Parkinson's disease, Huntington's disease, Tourette's syndrome, a neurodegenerative disorder in which there is loss of cholinergic synapse, jetlag, nicotine addiction, pain, ulcerative colitis or irritable bowel syndrome.

Claim 3 (original) A pharmaceutical composition comprising a compound according to Formula I or Formula II



wherein:

R<sup>1</sup> is -OH, -N(R<sup>2</sup>)<sub>2</sub>, -NR<sup>2</sup>-SO<sub>2</sub>-R<sup>2</sup>, -SO<sub>2</sub>-N(R<sup>2</sup>)<sub>2</sub>, -CON(R<sup>2</sup>)<sub>2</sub>, or -NR<sup>2</sup>COR<sup>2</sup> where R<sup>2</sup> at each occurrence is independently selected from hydrogen, C<sub>1-4</sub>alkyl, halogenatedC<sub>1-4</sub>alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3 R<sup>3</sup> moieties;

X is O, S or CH<sub>2</sub>;

Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>;

or a diastereoisomer, enantiomer or pharmaceutically-acceptable salt thereof, together with at least one pharmaceutically-acceptable diluent or carrier.

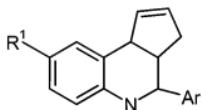
Claim 4 (original) The pharmaceutical composition according to Claim 3, in addition comprising a nicotinic receptor agonist.

Claim 5 (currently amended) A method of treatment or prophylaxis of Alzheimer's disease, learning deficit, cognition deficit, attention deficit, memory loss, Lewy Body Dementia, Attention Deficit Hyperactivity Disorder, anxiety, schizophrenia, mania, manic depression,

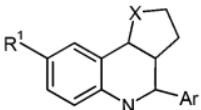
Parkinson's disease, Huntington's disease, Tourette's syndrome, a neurodegenerative disorder in which there is loss of cholinergic synapse, jetlag, nicotine addiction, pain, ulcerative colitis or irritable bowel syndrome comprising administering a therapeutically-effective amount of a pharmaceutical composition according to Claim 3.

Claim 6 (cancelled).

Claim 7 (original) A compound of Formula I or Formula II:



1



III

wherein:

$R^1$  is  $NR^2-SO_2-R^2$  or  $-SO_2-N(R^2)_2$  where  $R^2$  at each occurrence is independently selected from hydrogen,  $C_1$ -alkyl, halogenated  $C_1$ -alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3  $R^3$  moieties;

X is O, S or  $\text{CH}_3$ :

Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>.

or a diastereoisomer, enantiomer or pharmaceutically-acceptable salt thereof.

Claim 8 (currently amended) A compound according to Claim 7, wherein:

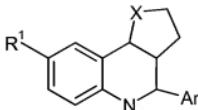
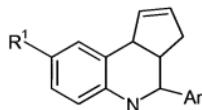
$R^1$  is  $-SO_2-N(R^2)_2$  where  $R^2$  at each occurrence is independently selected from hydrogen,  $C_1$ -alkyl, halogenated  $C_1$ -alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3  $R^3$  moieties;

X is O, S or CH<sub>2</sub>;

Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>[;].

Claim 9 (original) A compound according to claim 7, said compound being:  
4-(2-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(3,4,5-trimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(2-methyl-4,5-dimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(3,5-dimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(4-*tert*-butylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(2-naphthyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
4-(4-fluorophenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
8-methyl-4-(4-methylphenyl)-2,3,3a,4,5,9b-hexahydro-furo[3,2-c]quinoline;  
(3aR,4S,9bS)-8-methyl-4-naphthalen-2-yl-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline;  
(3aS,4R,9bR)-8-methyl-4-naphthalen-2-yl-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline;  
(3aR,4S,9bS)-4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
(3aS,4R,9bR)-8-methyl-4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
(3aS,4S,9bR)-4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
(3aR,4R,9bS)-4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;  
(3aR,4S,9bS)-4-(4-methylphenyl)-1,2,3a,4,5,9b-hexahydro-3H-cyclopenta[c]quinoline-8-sulfonamide or  
(3aS,4R,9bR)-4-(4-methylphenyl)-1,2,3a,4,5,9b-hexahydro-3H-cyclopenta[c]quinoline-8-sulfonamide  
or a pharmaceutically-acceptable salt thereof.

Claim 10 (previously submitted) A method of making a compound according to Formula I or Formula II



1

III

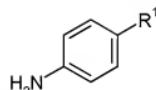
wherein:

$R^1$  is  $NR^2-SO_2-R^2$  or  $-SO_2-N(R^2)_2$  where  $R^2$  at each occurrence is independently selected from hydrogen,  $C_{1-4}alkyl$ , halogenated  $C_{1-4}alkyl$ , aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3  $R^3$  moieties;

X is O, S or CH<sub>2</sub>:

Ar is a moiety selected from furyl, pyridyl, thiienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>;

adding indium chloride to a solution of an arylaldehyde of formula Ar-CHO.



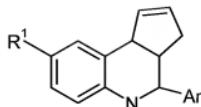
a 4-aminobenzenesulfonamide of the following formula



and cyclopentadiene or a compound of the following formula in acetonitrile and stirring overnight;

neutralizing, extracting, concentrating and purifying to afford a quinoline of Formula I or Formula II.

**Claim 11 (new)** A compound of Formula I:



I

wherein:

R<sup>1</sup> is NR<sup>2</sup>-SO<sub>2</sub>-R<sup>2</sup> or -SO<sub>2</sub>-N(R<sup>2</sup>)<sub>2</sub> where R<sup>2</sup> at each occurrence is independently selected from hydrogen, C<sub>1-4</sub>alkyl, halogenatedC<sub>1-4</sub>alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3 R<sup>3</sup> moieties;

Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2, 3 or more R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>;

or a diastereoisomer, enantiomer or pharmaceutically-acceptable salt thereof.

Claim 12 (new) A compound according to Claim 7, wherein:

R<sup>1</sup> is -SO<sub>2</sub>-N(R<sup>2</sup>)<sub>2</sub> where R<sup>2</sup> at each occurrence is independently selected from hydrogen, C<sub>1-4</sub>alkyl, halogenatedC<sub>1-4</sub>alkyl, aryl or heteroaryl where any alkyl, halogenated-alkyl, aryl or heteroaryl moiety is substituted with 0, 1, 2 or 3 R<sup>3</sup> moieties;

Ar is a moiety selected from furyl, pyridyl, thienyl, phenyl or naphthyl, said moiety having 0, 1, 2 or 3 R<sup>3</sup> substituents where R<sup>3</sup> is at each occurrence independently selected from hydrogen, halogen, C<sub>1-4</sub>alkyl, C<sub>2-4</sub>alkenyl, C<sub>2-4</sub>alkynyl, OC<sub>1-4</sub>alkyl, NH<sub>2</sub>, CO<sub>2</sub>H, CO<sub>2</sub>C<sub>1-4</sub>alkyl, CN, NO<sub>2</sub>, and CF<sub>3</sub>.

Claim 13 (new) A compound according to claim 11, said compound being:

4-(2-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;

4-(4-methylphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;

4-(3,4,5-trimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;

4-(2-methyl-4,5-dimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;

4-(3,5-dimethoxyphenyl)-3a,4,5,9b-tetrahydro-3H-cyclopenta[c]quinoline-8-sulfonamide;

4-(4-*tert*-butylphenyl)-3a,4,5,9b-tetrahydro-3*H*-cyclopenta[c]quinoline-8-sulfonamide;  
4-(2-naphthyl)-3a,4,5,9b-tetrahydro-3*H*-cyclopenta[c]quinoline-8-sulfonamide, or  
4-(4-fluorophenyl)-3a,4,5,9b-tetrahydro-3*H*-cyclopenta[c]quinoline-8-sulfonamide;  
or a pharmaceutically-acceptable salt thereof.

Claim 14 (new)      A pharmaceutical composition comprising a compound according to  
claim 11 or a diastereoisomer, enantiomer or pharmaceutically-acceptable salt thereof,  
together with at least one pharmaceutically-acceptable diluent or carrier.